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T-D

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/101,833	01/29/99	HIRAMATSU	Y PM255101

IM52/0523
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EXAMINER	
EVANS, G	
ART UNIT	PAPER NUMBER
1725	11

DATE MAILED: 05/23/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.	Applicant(s)
09/101,833	Hiramatsu
Examiner	**Group Art Unit**
Evans	1725

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication .
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

☐ Responsive to communication(s) filed on _____.

☐ This action is **FINAL.**

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle,* 1935 C.D. 1 1; 453 O.G. 213.

Disposition of Claims

☒ Claim(s) 1-25 is/are pending in the application.

Of the above claim(s) 13-25 is/are withdrawn from consideration.

☒ Claim(s) 7, 8/7, 9/8/7, 10 is/are allowed.

☒ Claim(s) 1-6, 8/5, 8/6, 9/8/5, 9/8/6, 11 and 12 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 11 9(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 1 7.2(a)).

*Certified copies not received: _____.

Attachment(s)

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☒ Notice of Reference(s) Cited, PTO-892

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Interview Summary, PTO-413

☐ Notice of Informal Patent Application, PTO-152

☐ Other _____

Office Action Summary

DETAILED ACTION

1. Claims 6, 8/6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 6 still recites

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okada et al. in U.S. Patent No. 5,690,846 in view of Hans et al. in U.S. Patent No. 5,582,745 . Okada et al. has an apparatus for machining a board with a carbon dioxide laser and an XY table for adjusting the correct position of the board and a CCD camera for monitoring the hole. Hans et al. teaches laser drilling holes (see column 3, lines 45-50) and using registration marks on the board (see column 4, lines 25-36) prior to the laser drilling the holes. It would have been obvious to adapt Okada et al. in view of Hans et al. to provide this to form the hole in the proper position.-4

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 5,6, 11, 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muncheryan (180) in view of DeRossett, Jr. in U.S. Patent No. 5,298,717 and Okada et al. (846) Muncheryan discloses a carbon dioxide laser (see column 9, line 53) and a harmonic wave generator (element 12 see column 5, lines 63-64) but does not disclose a scanning head for deflecting the beam in the XY directions. DeRossett, Jr. teaches using a scanning head for deflecting the beam in two directions (see column 5, lines 43-57) and using inputs to the scanning head from an optical fiber (see column 10, lines 56-59). Okada et al. teaches that it is known to use a carbon dioxide laser to drill holes (to the extent that this teaching is necessary. To adapt Muncheryan in view of DeRossett, Jr. and Okada et al. to provide this to provide a laser treatment in a 2 dimensional plane.

6. Claims 8/5,8/6, 9/6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muncheryan (180) in view of DeRossett, Jr. in U.S. Patent No. 5,298,717 and Okada et al. (846) as applied to claim s 5 and 6 above, and further in view of Roland et al. in U.S. Patent No. 3,792,287. Roland et al. In column 6 lines 14-16 teaches using a carbon dioxide laser with a thallium-arsenic-selenium crystal to obtain a harmonic frequency. It would have been obvious to adapt Muncheryan (180) in view of DeRossett, Jr. in U.S. Patent No. 5,298,717 , Okada et al. (846) and Roland et al. to provide this to double the laser beam frequency.

7. Applicant's arguments filed March 8, 2001 have been fully considered but they are not persuasive. Okada et al. teaches that it is known to use a carbon dioxide laser to drill vias.

8. Claims 7, 8/7, 9/8/7, 10 are allowed.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Geoffrey Evans whose telephone number is (703) -308-1653.

GSE

May 21, 2001

Geoffrey S. Evans

GEOFFREY S. EVANS
PRIMARY EXAMINER
GROUP 210
1700